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ABSTRACT This paper traces the history of the College Entrance Examination Board from its beginnings through its operations in 1966. Using material drawn from various published and unpublished sources both of the Board and of the Educational Testing Service, summary accounts of objectives, formats, manner of administration, scoring, and critical evaluations of the Admissions Testing Program (including the Scholastic Aptitude Test and the several achievement tests), the Preliminary Scholastic Aptitude Test, the College-Level Examination Program, and the Advanced Placement Program are presented. The use of test internationally is also treated. Particular attention is paid to research undertaken by the Board, especially in relation to a report made to the trustees of the Board in 1964. This report identified the Board's research and development programs as having the following objectives: to describe and project changes in the admissions process, to develop models of the admissions process, to develop strategies for dealing with existing or anticipated problems, to implement programs for effecting strategies, and to evaluate new programs. Among the areas noted as necessitating further research were: students' motives to attend college; guidance procedures; channels of access to higher education; financial restrictions; admissions procedures and standards; and, the problems of the talented, disadvantaged, and international student. (RJ)

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Sam A. McCandless
College Entrance Examination Board, ~~1967~~

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College Entrance Examination Board, 1967.

A Brief Description of the Historical Background and Current Status of the Testing Programs of the College Entrance Examination Board[1]

Sam A. McCandless

I. Historical background

The College Entrance Examination Board was voted into existence at the turn of the century in an attempt to introduce order into an educational situation approaching an anarchy which toward the close of the 19th century had become almost intolerable to schoolmasters. At this time there was very little agreement among colleges, either with respect to the types or standards of subject matter proficiency they required of their applicants. This diversity of college demands on the secondary schools made the task of preparing their students for admission to college extremely difficult. The College Board provided the foundation for a system in which a set of syllabuses and examinations based on them represented some of the important elements of a badly needed uniformity.

In its first year of operation the College Board held essay examinations in nine subjects. The examinations were determined, even as they are now, by a carefully

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1. This paper includes summary accounts of the several testing programs and related services of the College Board. The material is drawn from various published and unpublished sources both of the Board and of Educational Testing Service. A special debt is owed to a draft of a technical manual on the Admissions Testing Program which is being prepared at ETS for the College Board.

selected committee of examiners made up of teachers and scholars in the leading colleges and secondary schools. Committees of readers at first attached evaluative ratings to their percentage type grades, but later, in recognition of the wishes of the schools and the colleges to recognize their own standards of performance, these absolute ratings were dropped, and schools and colleges were left free to attach whatever evaluations they considered to be appropriate to the various numerical grades.

These essay examinations were taken in June, graded in July and August, and the results reported to colleges prior to the opening of the fall session. However, as might be expected, studies indicated that a student's grade depended to a considerable extent on the year in which the examination was written and on the reader evaluating it. Systematic efforts, only partially successful, were made to improve the reliability of readers' marks and to reduce the variability in test difficulty from year to year.

About the time of World War I, the philosophy of examinations itself, especially for admission to college, began to gravitate toward an embracing of "comprehensive examinations" which gave students greater latitude to draw on the sources they had studied in answering questions that stressed grasp of principles and concepts more than knowledge of particular pieces of information. This new development led to violent objections from the conservatives within the Board who insisted that it would be impossible to prepare students for the examinations, that they would be too difficult to grade, and that examinations of this sort would place a premium on superficial cleverness at the expense of genuine scholarship.

But in the 1920's the so-called New Plan Comprehensive

Examinations were introduced alongside the Old Plan subject matter examinations. Both sets of examinations were, however, increasingly regarded by some member institutions as being given too late in the year to help these leading Eastern colleges to attract scholarship candidates from other regions. These candidates would have by June already committed themselves elsewhere. Furthermore, students from schools which had not traditionally supplied candidates for these colleges were not likely to have studied the syllabuses prescribed for the Old Plan tests. The Eastern colleges were becoming eager to nationalize their student body by admitting students who were not from the East, but the existing examination program hindered their efforts. As a result, in 1937 a one-day battery of Achievement Tests, known as the Scholarship Testing Program, was introduced, with an April testing date. These tests were one-hour multiple-choice tests which sampled knowledge of curricula broadly, rather than covering a prescribed syllabus. The tests were made as secure as possible. They were the forerunners of the present Achievement Tests.

During this period the Board, stimulated by the work done during World War I in the testing of "general intelligence," also established a commission to investigate the usefulness in college admissions of psychological tests of abilities. The outcome was a test called the "Scholastic Aptitude Test" which was produced by a committee headed by Professor Carl C. Brigham, and given for the first time in 1926. In 1929, Dr. Brigham decided that it would be desirable to divide the SAT, which had yielded a single score, into two separate sections -- one measuring verbal aptitude and the other measuring mathematical aptitude -- in recognition of the differential relevance of verbal and mathematical aptitudes at different colleges, with varying curricula.

With the onset of World War II, many colleges began operating on a year-round basis, admitting students directly from high school to a summer quarter. Consequently, examination results were needed much earlier than formerly. The Achievement Tests in the April Scholarship Testing Program were substituted for the June essay exams, whose former readers were in some instances teaching summer school or employed in wartime industries for the summer. By the end of the war the program had proved so successful that it was continued, and the essay tests were not revived.

After the war, in 1947, the Educational Testing Service was formed, through a merger of the testing activities of the College Board, the American Council on Education, and the Carnegie Foundation for the Advancement of Teaching.

During the war years, the Board had developed the V-12 testing program for use in selection of high school graduates for officer candidate training, and toward the end of the war had prepared tests specifically designed for use in college admissions of veteran applicants. It continued after the war to assist in the preparation of qualifying examinations for the Foreign Service, the Naval Academy, the Coast Guard Academy, and the Bureau of Naval Personnel. It also prepared tests for scholarship awards sponsored by Westinghouse and Pepsi-Cola. In 1948 some of these testing programs were turned over to the ETS to be managed by it. Others, including the programs for the service academies, have been incorporated within the general Admissions Testing Program of the College Board.

Since the war, the College Board has broadened its perspective and offerings in an effort to respond to the increasing number and variety of students, courses, and institutions. Listening Comprehension Tests in modern

languages, and new tests in Hebrew and in Russian, have been added, and the tests in mathematics, science, and social studies have undergone major revision. The Preliminary Scholastic Aptitude Test was inaugurated for guidance purposes, and the Advanced Placement Program initiated in recognition of the increasing strength of the secondary schools, and the desire to provide challenging and rewarding programs for the more talented secondary school students who might, as a result, receive college credit or advanced placement for work completed in high school. A Commission on Mathematics was appointed to strengthen and bring up to date the teaching of mathematics in the schools, and was followed by a Commission on English. The College Scholarship Service was organized to spread the idea of scholarship aid on the basis of financial need, and to develop equitable and consistent standards for awards of financial aid by subscribing institutions. The College-Level Examination Program has the broad purpose of developing a national system of placement and credit by examination in higher education. The Board now offers an aptitude test in Spanish, an aptitude test in English for African students, and a proficiency examination in English for students to whom it is a foreign language, all of which reflect the Board's continuing and expanding concern with facilitating access to higher education.

II. The Admissions Testing Program

The bulk of the College Board's tests have been given, taken, and used for college admissions purposes. The Admissions Testing Program presently consists of a Scholastic Aptitude Test (SAT), and fourteen Achievement Tests covering English composition, six foreign languages

(French, German, Hebrew, Latin, Russian, and Spanish), two branches of the social studies (American History and Social Studies, and European History and World Cultures), two levels of mathematics (Level 1-Standard, Level 2-Intensive), and three sciences (biology, chemistry, and physics). The SAT is a three-hour test yielding two scores, a verbal score and a mathematical score. The Achievement Tests are each one hour in length; they are given in a single three-hour test session. A candidate may take any one, two or three at one sitting; each test yields a single score.

During the Achievement Test session, an exercise known as the Writing Sample is also offered. This is a one-hour free essay, copies of which are transmitted unread and ungraded to colleges named by the candidate, and to his school. Beginning in May, 1968, a one-hour, all objective achievement test in literature will be offered in addition to the English Composition Test and the Writing Sample.

The Admissions Testing Program is administered five times during the academic year, on Saturdays in December, January, March, May, and July, at centers established throughout the world. Following each of these administrations, except for the smallest in July, Sunday sessions are provided to accommodate candidates who observe the Sabbath on Saturday. On each test date the SAT is offered in the morning, and some or all Achievement Tests and the Writing Sample in the afternoon (the candidates may take as many as three). Depending upon college admission requirements, a candidate on any one day may take the SAT, one or more Achievement Tests, the Writing Sample, or any combination of these, up to three of the latter. Many candidates take the SAT and Achievement Tests on different days. A November administration of the SAT only may be added in 1968. A variety of dates is necessary to cope

with varying admissions schedules.

As an adjunct to the Admissions Testing Program, a series of Supplementary Achievement Tests is given on a single date in February. These consist of five thirty-minute tape-recorded listening comprehension tests in foreign languages (French, German, Italian, Russian, and Spanish), and two Achievement Tests elected by too few candidates to justify their inclusion in the regular program, a ninety-minute free response test in Greek, and a sixty-minute objective test in Italian. They are available to candidates who register for the regular Achievement Tests during the testing year, and whose secondary schools choose to give them. The Listening Comprehension Tests and the corresponding foreign language Achievement Tests may be replaced by composite tests of reading and listening skills. The Committee on Examinations has approved in principle the introduction of such composite tests in the regular program, providing a field trial shows they can be managed.

Another adjunct, the Institutional Admissions Testing Program, makes possible the on-campus administration of the SAT and Achievement Tests to applicants who apply for admission too late to take the tests on scheduled dates.

Still another adjunct, the Placement Testing Program, provides recent editions of the Achievement, Supplementary Achievement, and Listening Comprehension Tests for local administrations by colleges to enrolled students for placement purposes. Nearly 200 colleges gave over 120,000 of these tests in 1965-66.

A. The Scholastic Aptitude Test

The Scholastic Aptitude Test is a measure of basic reasoning abilities in two areas: verbal and mathematical. It provides a separate score for each of these areas and is

used almost always in conjunction with the high school record and other information to assess competence for college work.

The SAT-Verbal consists of ninety items of which eighteen involve the meaning of antonyms, eighteen the completion of sentences, nineteen the completion of analogies, and thirty-five the comprehension of reading passages. The SAT-Mathematical consists of sixty items which are divided into two item types: "regular" or general mathematics items common in form to many other tests, and "data sufficiency" items. Examples of each item type are given in Appendix A.

Within the test, each block of items of a similar type is arranged in the order of increasing difficulty, from easiest to hardest, and insofar as is possible, the mean difficulty of each block is equal to that of the test as a whole. In the test, the ninety items of verbal material always precede the sixty items of mathematical. This reflects the judgment that more candidates experience difficulty with the mathematical materials than with the verbal, and that the likelihood of a poor initial performance impairing subsequent attainment is therefore less if the verbal questions come first. Within each test there is one section of questions included for the purpose of equating the test to earlier forms, or of pretesting items for future use. This experimental section of the test does not affect the candidate's test score.

The SAT has been the subject of continuous research and development for forty years. As a consequence, there have been changes in the time limits, test length, content, item types, scoring, scaling, method of assembly, specifications, manner of administration, candidate population, and educational context within which the test is offered. Deliberate efforts have been made to reduce speededness

in the tests, and to include item types which are difficult to "coach" and which are not mere repetitions of the item types commonly used in the schools.

Today, it must be a rare candidate who has not become quite familiar with multiple-choice tests long before he approaches the SAT. Nevertheless, familiarity is not assumed, and in spite of the extensive descriptive literature concerning the tests which is widely available and contains a complete practice test, extensive instructions are given and model questions are used in the test itself.

All of the items on the test are five-choice items and the test is "formula scored" -- that is, there is a correction for guessing: the raw score is the number of five-choice items correctly answered less one-fourth the number incorrectly answered. From the available evidence, formula scoring increases test variance and reliability. The introduction of the corrected scores did not produce any detectable distortion of the Board's scale. There is also presented, both on the back of the test booklet and in the descriptive booklet, a discussion of candidate behavior appropriate to the formula-scored test. The student's best strategy is to guess only if he can identify one or more of the five choices as incorrect.

Since 1947, the actual assembly, as well as the administration, of the SAT has been the responsibility of Educational Testing Service. In making basic changes, and in monitoring the development and administration of the test, the College Board depends heavily on its Committee of Examiners in Aptitude Testing (CEAT), and on the Committee on Examinations. The CEAT, consisting of seven prominent specialists in educational measurement, oversees the general development of the test. The techniques for the assembly of the SAT have grown increasingly formal and prescriptive over the years. Perhaps the greatest

benefit of this carefully prescribed system is the control one likely gains toward greater parallelism among test forms.

Although the SAT is intended to be basically a power measure, and its evolution over the years has called for increasing amounts of time per item, speed is inevitably a factor since it is a timed test. In recent years nearly all of the candidates have completed three-fourths of the test:

Table 1. Per Cent Completing Three-Quarters of the Test Eight SAT Forms - 1964-1966

	Verbal		Mathematical	
	30-Min. Section	45-Min. Section	30-Min. Section	45-Min. Section
Dec 1964	100.0	99.7	97.0	97.8
Jan 1965	99.2	99.5	98.9	96.8
Mar 1965	99.7	98.6	93.2	99.7
May 1965	100.0	99.7	97.0	99.2
Dec 1965	100.0	98.6	92.7	99.5
Jan 1966	98.6	98.8	97.0	97.6
Mar 1966	99.4	99.6	92.5	98.4
May 1966	100.0	98.4	92.5	99.0

The fundamental utility of the two separately recorded scores for the SAT is strongly influenced by the extent of their intercorrelation. From the standpoint of predictive efficiency, it is desirable for SAT-V and SAT-M to be highly correlated with the criterion to be predicted, but only lowly correlated with each other. However, their intercorrelation has been increasing in magnitude since the 1940's. In 1945 a correlation range of .40 to .45 was observed. By 1950 these correlations began to rise, and currently the correlation is about .65. Several hypotheses have been advanced to explain this phenomenon, but it remains somewhat of a mystery.

Scores on the SAT are expressed as numbers on a scale

ranging from 200 to 800. Until 1941 the 200-800 scale was imposed on the raw scores of each form by setting the mean at 500 and the standard deviation at 100 for both SAT-V and SAT-M. Thus the average score on both sub-tests each year was 500, but a 500 one year did not necessarily represent the same level of ability as a 500 in another year, because the candidates might vary in ability from year to year. Since 1941 the various forms of the SAT have been equated so that scores from form to form or even year to year are comparable. This is an important advantage, but the disadvantage is that the mean and standard deviation are consequently free to vary. In January of 1967, for example, they were 448 and 106, and 486 and 114, for SAT-V and SAT-M respectively.

This fixing of the scale has brought with it an increased need for normative data for score interpretation. Despite efforts to meet this need, some proportion of the public continues to think of 500 as the average score of the current candidates, or of some larger group, whereas it is the average score of no defined group other than the April, 1941 candidate group which happened to be present at the test administration when the present system of equating was begun.

Within six weeks after the test date, the SAT and Achievement Tests scores are sent to the candidates' schools, and to the colleges and scholarship programs the candidates designate. The scores sent to the schools are printed on pressure-sensitive labels; one of these the school is to affix to an interpretative booklet before giving it to the student.

A recent study indicated that most of the students were able to make correct interpretations regarding the nature of admissions tests, the percentile values of specified scores with specified norm groups, and error of measure-

ment. Questions associating SAT scores with chances of admission and chances of success in three hypothetical colleges revealed a tendency to overgeneralize from SAT scores alone, although such responses may well have seemed to many students to be the expected responses.

The Committee on Examinations endorsed a resolution of the Committee on Guidance that as soon as is feasible, scores on tests should be reported directly to the students as well as to the schools, colleges, and scholarship sponsors that now receive these scores.

At the present time, about 1,400,000 SAT's are taken each year by about 1,300,000 students. Roughly one-third of the SAT's are taken by students in the eleventh grade, most of whom will take it again as seniors. Few students take it in the tenth grade, but some college students take the SAT for transfer purposes. About sixty percent of the SAT's are taken by seniors.

It is estimated that nearly one-third of the recent secondary school graduating seniors in the United States had taken the SAT, and that over half of the students entering college the next year had taken the test.

Boys took 55% of the SAT's in 1965-66, but the number of SAT's administered to girls is increasing at a faster rate than is the number administered to boys. The Northeast contributes more than other regions to the SAT candidate group, but the SAT candidates are distributed regionally in about the same proportion as are the member colleges of the Board.

Over 800 of the 2,000 or so colleges in the United States require the SAT of all applicants; these include over one-hundred colleges which are not members of the College Board. Another 150 colleges require candidates to take either the SAT or some other test, and still other colleges require it only of some candidates, recommend it, or will

accept it in lieu of another test. It seems likely that at least half the colleges in the country make some use of the Scholastic Aptitude Test.

If another entrance test is required, it is usually the examination of the American College Testing Program (ACT); currently, about 900,000 students take it each year. ACT's Student Assessment Program uses four tests of educational development and academic potential, a set of self-reported high school grades, and a student information blank. The four ACT tests of educational development and academic potential are an English reading and usage examination, a mathematics usage examination, a social studies reading examination, and a natural sciences reading examination. In the testing session, each student is asked to report his last grade prior to his senior year in each of the areas of English, mathematics, social studies, and natural sciences. The student information blank asks for the kind of information that many colleges request in their application forms, that is, biographical information and a report of educational and career plans.

The most obvious difference to the observer between the ACT Student Assessment Program and the College Board Admissions Testing Program is that the ACT asks for the student's self-reported high school grades and produces a student profile section based upon the student information blank. The Board's program reports only a student's scores on his tests. Whereas the College Board's program tests academic potential primarily through the SAT and educational development primarily through the Achievement Tests, the ACT tests seem to estimate academic potential by measuring educational development with a correspondingly greater emphasis on content validity of the items, reflecting ACT's feeling that the best way to predict success in college is to measure as directly as

possible the abilities and knowledge the student will have to apply in his college work. The tasks presented in both ACT's and the Board's tests are meant to be significant in their own right rather than defensible only on the grounds of their statistical correlation with a criterion. However, the ACT tests are oriented more toward major areas of college and high school instructional programs, and the SAT has reflected a structural or psychological definition of scholastic aptitude. Although no well-designed study of the equivalence of these two tests has been conducted, and serious doubt exists regarding the technical possibility of doing so, scores on the two sets of tests tend to be substantially correlated.

B. The Achievement Tests

The College Board subject matter or Achievement Tests have served varied functions, and it is not always easy to determine what those functions are at any particular time for any particular institution. Colleges may require that candidates for admission submit scores on certain of the Achievement Tests for one or more of the following reasons: (1) to certify that a candidate has or has not achieved a level of competence considered prerequisite to admission to that college, (2) to place students in a college sequence at different levels depending on their prior achievement, (3) in combination with other information such as SAT scores and secondary school grades to make predictions of performance in college, (4) to help identify students who have demonstrated unusual attainment in a particular area of work, (5) to communicate to students and schools a sense of the stress placed on strong academic preparation.

Central to the CEEB Achievement Testing Program is a committee system which rests on the assumption that a

representative committee of competent school and college teachers can construct a single examination in a subject matter field which will be appropriate for assessing the level of achievement of candidates who may have taken courses based on different text books and with somewhat different emphases. Committee members will ordinarily be those who are teaching secondary school seniors or college freshmen, and who are, therefore, aware of current practices at these levels. Working closely with the committee and assuming responsibility for the coordination of the work between meetings of the committee, is a test specialist from the staff of the Educational Testing Service.

Achievement Test scores, as are the SAT scores, are reported on a scale ranging from 200 to 800, and the various forms of each Achievement Test are equated not only so that scores made at different administrations of that test are comparable, but also so that scores made on different Achievement Tests in different subjects are as comparable as is logically and technically possible. This process entails a highly complex technical apparatus -- test scores are anchored to the scores of the various candidate groups on the SAT -- but it is designed to prevent a student from gaining an advantage by taking Achievement Tests which are taken by less able candidates or from losing by taking tests which are taken by a more able group. It also eases the task of the admissions officer by putting all scores along a common scale.

Each committee of examiners has the responsibility of keeping the test closely related to the curricula of the schools. As curricula change, the content of the tests should reflect the changes. Thus, while tests in successive years follow very much the same specifications, over a period of years there may be marked, though gradual, changes. As may be surmised, the statistical requirements

necessary to effect the equating of various forms and tests would prohibit rapid adjustments. Where evidence shows that a student who studies a subject in a novel curriculum -- for example, one of the new curricula in the sciences -- may be at a disadvantage, special achievement tests may be devised, or special advice regarding score interpretation may be offered.

Responsibility for advising the Board regarding specifications for the total testing program rests with a Committee on Examinations, which is a standing committee of the College Board. Each committee of examiners in a field begins its work within a well established framework. The test to be constructed must fit into the allotted testing time, must be reasonably parallel to immediately preceding forms, and must conform to overall policy requirements.

Each test is constructed on the basis of a detailed set of specifications. These include a plan for sampling content and also specifications of difficulty and validity indices for the various items which help insure the tests will provide maximum discrimination among the candidates who take them. In addition to setting content specifications, the Committee of Examiners is responsible for writing and reviewing test questions, for revising questions on the basis of information provided through pretesting of the questions, and for approving questions which are to appear in each new form of the test.

Indices of speededness are computed for each new form of an Achievement Test. The aim is to set an examination which is of such a length that there will be optimum measurement of the candidate group as a whole. This means that a certain proportion of the candidates who work slowly or who are not able to make a reasoned response to all of the questions will not complete the examination.

In order to minimize the possibility that slow workers might be at a special disadvantage, questions are arranged roughly in order of their difficulty. Ideally, 80% of the candidates should complete the entire test, and all of the candidates should complete 75% of the test. The data on speededness in the table in Appendix C are offered as illustrative of the kind of check made on these criteria.

One statistical characteristic of the Achievement Tests which is of considerable interest is the correlation between each of the tests and the two scores on the SAT. From the standpoint of predictive efficiency, if a test is to be used along with other measures for making statistical predictions, it should have a relatively high correlation with the criterion to be predicted, and a relatively low correlation with the other measures. This objective sometimes conflicts with the development of an achievement test as a model of the knowledge and understanding implied by mastery of a given subject matter. To some observers the typical correlations between the SAT and the Achievement Tests are unusually high. For example, the following, which appears in the Sixth Mental Measurement Yearbook, (Buros, 1965, page 980) illustrates the kind of criticism which may be expected when the evaluation is made from the standpoint of predictive efficiency.

"Here are ... correlations between scores from the main achievement tests and the SAT-V: ECT, .76; Social Studies, .78; French, .60; Chemistry, .65; Physics, .67; Intermediate Mathematics, .53; and Advanced Mathematics, .54. The corresponding correlations for SAT-M are: .55, .64, .46, .72, .69, .80, and .75.... These almost unbelievably high correlations suggest that whatever is measured by the ECT and the social studies test is also measured by the SAT-V, and that whatever is measured by

the intermediate and advanced mathematics tests is also measured by the SAT-M."

There is little doubt that the tests have a high percentage of common variance, but it is also true that they are not measuring exactly the same factors. Depending on the test, estimates of reliable unique variance range from between 15% and 45%. Whether or not these percentages are considered negligible or important will depend upon the use which is made of the test scores and the evaluative context in which they are viewed.

Currently, about half a million students take nearly one and one-half million Achievement Tests each year, including about 125,000 tests administered locally by colleges for placement purposes to students already enrolled. Virtually all of the Achievement Test candidates are among the SAT candidates; they comprise about forty percent of that group. They take, on the average, 3.1 Achievement Tests, and are concentrated in the Northeast even more heavily than are the SAT candidates. Boys also predominate among Achievement Test candidates, and by a larger majority -- 60% boys vs. 40% girls -- but the girls are gaining even more rapidly than in the case of the SAT.

As can be seen from the table in Appendix B, most of the Achievement Test volume is concentrated in the English Composition and the Mathematics Tests, and the Supplementary Achievement Test volume is still growing rapidly. Over 300 member colleges require some Achievement Tests of their candidates -- a common practice is to let the candidate choose any three of them.

C. The Validity Study Service

The College Board has for several years sponsored a number of programs designed to assist college admissions

officers with problems of predicting academic performance. Since 1964 the Validity Study Service program has provided both member and non-member colleges, at no cost, with a flexible plan for studying the effectiveness of school records, test scores, and other data in predicting grades and other measures of performance in college. Colleges using the Validity Study Service can investigate the effectiveness of various predictors or combinations of predictors for purposes of admission or placement, and for counseling prospective applicants. The Validity Study Service completed studies for more than 600 student groups in over 150 colleges in 1966-67.

The maximum number of predictor variables is eleven, which allows for high school average or rank in class, SAT-V, SAT-M, as many as three Achievement Test scores, and as many as five local predictors. Groups of 100 students are needed, and to study more than three predictors larger groups are needed.

As a result of the validity study, colleges are provided with the correlation of each predictor and of selected combinations of predictors with each criterion measure, equations for calculating the predicted grade for an individual student, tables showing the probability that a student having a given predicted grade will earn grades at or above selected grade averages, aids to facilitate the computation of predicted grades, and distributions of predictors and criterion measures which can serve as local norms.

III. The Preliminary Scholastic Aptitude Test (PSAT)

The Preliminary Scholastic Aptitude Test (PSAT) is a somewhat shorter version of the Scholastic Aptitude Test, and is constructed from a pool of retired SAT items. It

is administered to a population consisting primarily of high school juniors. This testing program originated with three major purposes. (1) To offer an instrument that would give students information about themselves that would be helpful in planning their futures. (2) To assist schools in identifying potential college students, who, not fully realizing their potential abilities, might not be planning to continue their education. (3) To offer a less expensive and more timely test for students who would otherwise take the Scholastic Aptitude Test unnecessarily early and often in order to have their scores for making their college plans.

Normative information is developed which relates PSAT scores to SAT scores and to college success. A current study will extend the normative data presently available on eleventh and twelfth grade students to the tenth grade. The PSAT is a two-hour test consisting of 70 verbal items and 50 mathematical items. It may be considered a parallel form of the SAT, affording all the parallelism, reliability, and validity that the senior test provides. It is, however, not intended as an admissions test, and is administered by the schools.

In 1966 over 1,200,000 students took the PSAT. Eighty percent of these students were in the eleventh grade and slightly more of them were girls than boys. The remaining 20% consisted mainly of seniors, although a small, and increasing, number of sophomores take the test. The nearly 1,000,000 juniors taking the PSAT comprise about one-third of their class and are distributed among about 60% of the nation's secondary schools. PSAT user schools vary from 93% of the schools in the Northeast to 67% of the schools in the Midwest.

Schools which do not use the PSAT tend to be more often smaller schools, and they are likely to send a smaller

percentage of their students on to education beyond high school than are schools which do use the PSAT. Eighty percent of the non-user schools describe themselves as serving either small towns or rural areas, while only 55% of the user schools serve these areas. Twice as many non-user schools describe their school population as 90% or more non-white.

The majority of those responding from user schools are attracted to using the PSAT because it contributes useful guidance information and helps reduce the number of students taking early SAT's. However, community pressure is also a significant factor. Non-user schools, in the main, have never administered the PSAT because they feel that another test gives the same information.

Although user schools feel that the PSAT is most useful if it is taken in the eleventh grade rather than in the twelfth, more user schools administer the test to eleventh grade students only on request. User schools do, however, tend to require college-bound twelfth grade students to take the PSAT if they did not take it on their own initiative in the eleventh grade.

The PSAT is given twice in October; scores are reported in December to the principals of the schools administering it. The principals receive three pressure-sensitive score labels for each student, and may release the scores at their discretion to students, colleges, and scholarship sponsors. The schools also receive for each candidate a score interpretation leaflet to which one of the score labels may be attached. Students receive their PSAT scores in an individual meeting with a counselor in most schools. In about one-fourth of the schools an explanation of the scores is given in a group meeting, and in almost one-third of the schools the scores are distributed to the students, but an interpretation, other

than that given in the leaflet, is available only upon request.

A student's first contact with College Board tests is likely to be with the Preliminary Scholastic Aptitude Test since about two-thirds of the SAT candidates have previously taken the PSAT, and virtually everyone who takes the Achievement Tests has also taken the SAT.

Students receive their PSAT scores on labels attached to an interpretative leaflet which explains what the scores mean and how they can be used in planning for college. The leaflet contains tables which enable eleventh and twelfth grade students to compare their PSAT scores with the scores obtained recently by a group representative of all students of their grade and sex, a group representative of all students of their grade and sex who later entered college, and a group representative of all students of their grade and sex who completed their first year of college in "good standing" academically. A current study will extend the norms to the tenth grade students as well.

For example, a junior boy with a PSAT score of 52 (PSAT scores are reported on a scale which ranges from 20 to 80 rather than from 200 to 800) can see that his score had a percentile rank between 91 and 96 among all junior boys, between 81 and 90 among junior boys who later entered college, and between 75 and 87 among the junior boys who completed their first year of college in good standing.

The leaflet also tells students how they can estimate their SAT scores. Seniors need only affix a zero to predict their SAT score two or three months later, with two chances out of three of obtaining a score within fifty points of the predicted score. Juniors affixing a zero and adding fifty points have two chances out of three of obtaining the following year an SAT score within 60 points

of their predicted score.

Although the leaflet explains that the scores of college students vary both from college to college and within colleges, no information is given about the distribution of scores among or within particular colleges. The leaflet refers the student to the school guidance counselor for such information.

A student's SAT and Achievement Test scores are also attached to an interpretative leaflet containing tables which enable the students to compare their SAT scores with the SAT scores obtained recently by a group of students representative of all seniors of their sex who later entered college, and a group representative of all seniors of their sex who completed the first year of college "in good standing" academically. Each table is divided into two parts, one part for verbal scores and the other for mathematical scores. For example, a boy with an SAT-V score of 525 can see that his score has a percentile rank between 85 and 91 for the group of all senior boys, between 69 and 81 for the group of all senior boys who later entered college, and between 60 and 75 for the group of all senior boys who completed their first year of college "in good standing" academically.

The leaflet also contains percentile tables for the Achievement Test scores; in these candidates are not grouped by sex, but rather by grade level or by the number of semesters or years the subject was studied. For example, a student with a score of 525 on the English Composition Test can see that his score has a percentile rank between 46 and 63 for a representative group of seniors. The same score has a percentile rank on the French Achievement Test between 91 and 96 for the group representative of the candidates who had studied French for two years, between 63 and 80 for three-year group, and

between 28 and 47 for the four-year group.

Like the PSAT leaflet, the SAT and Achievement Test leaflet refers the student to the school guidance counselor for information about how his scores compare with those of students in particular colleges.

An interpretative guide to College Board score reports prepared for counselors and admissions officers contains all the tables in the two student leaflets and somewhat more information about the tests. School officials may also have a copy of the Board's Manual of Freshman Class Profiles which contains widely varying amounts of information about some of the member colleges. Each college prepares its own profile and decides which tables to include and what other information to present in the accompanying text. The profiles include a capsule characterization of the college, followed by description of their applicants, their enrolled students, and financial aid. The number of tables in the individual profiles varies from none to more than forty. Many, for example, include distribution of class rank and SAT scores for applicants or enrolled students.

Thus, a secondary school student, with his test scores and class rank or grade-point average, and with the help of a counselor who has a Manual, can compare his academic records with those of recent freshmen at the member colleges which choose to have a profile in the Manual and to supply the necessary information in their profile. In the current Manual there are profiles on some 500 of the member colleges, that is, about one-fourth of the nation's colleges. It is difficult to estimate the proportion of students who have access to counseling of this sort. In any case not all schools have the Manual of Freshman Class Profiles. All were offered the last edition without charge providing they would agree to return a questionnaire on

its usefulness; 8,000, that is about a third of them, accepted the offer.

Students may, of course, find some quantitative information about the academic record and test scores of applicants or enrolled students of certain colleges in other sources, or from the college itself. The College Board publishes The College Handbook primarily for the student who plans to go to college and is in the process of deciding which college or colleges he would like to attend. It presents descriptions of all member colleges including such information as location, size, programs of study, terms of admission, and financial aid. Many colleges will report the average scores of their freshman class in the Handbook. Similar information is in other reference works on college admissions.

Both the College Handbook and the Manual of Freshman Class Profiles have been published biennially; the 1969-71 editions will be combined into a single publication.

In summary then, it seems that the students in less than one-third of the secondary schools presently have access within their school to detailed quantitative information about the academic records and College Board test scores of students at less than one-fourth of the nation's colleges. This is in vivid contrast to the colleges' situation since any college can require applicants to submit their record and test scores and has, through the Validity Study Service of the College Board, sophisticated analyses of them available without charge.

IV. The College-Level Examination Program

The College-Level Examination Program (CLEP) is the newest of the Board's testing programs and is presently as small in volume as it is large in potential. The Council

on College-Level Examinations was appointed in the spring of 1965. Four objectives of the program reveal some of the dimensions of the project: To provide a national program of examinations that can be used to evaluate non-traditional college level education, specifically including independent study, radio, television, and correspondence work; to encourage colleges and universities to do a more valid job of placement, accredidation, and admission of non-traditional and transfer students; to provide colleges and universities a means by which to evaluate their programs and their students' achievement; to stimulate colleges and universities to become more aware of the possibilities, needs, and problems of credit by examination.

It is hoped to have perhaps 65 examinations in eight years and 200 within another eight years. Panels of distinguished teachers appointed by the Board will describe ideal tests and appraise existing ones. The Comprehensive College Tests, which were already in existence as an ETS program, were adopted as a logical base for CLEP. The College-Level Exams will rely on ETS for administration and some, but not all, test development.

CLEP administers general examinations which are comprehensive measures of undergraduate achievement in liberal arts areas, and also subject matter examinations. The five general examinations cover achievement at the sophomore level in English composition, humanities, mathematics, natural sciences, and social sciences and history. In 1965-66 some 10,000 people took the general examinations and 8,000 took the subject examinations as well, in various educational institutions. In 1966-67 about 16,000 candidates sat for these exams at institutions. In addition, 40,000 servicemen took nearly 200,000 CLE's in 1965-66.

At the present time, about fifty colleges have indicated

that they will support CLEP by considering individuals for credit or placement on the basis of CLE scores. Both the United States Armed Forces Institute (USAFI) and the Commission on Accredidation of Service Experiences have endorsed CLEP, and the Federation of Regional Accrediting Commissions has approved a resolution to the effect that non-traditional students should be permitted to validate their work through CLEP.

An example of a non-traditional user is the Port of New York Authority, a quasi-governmental agency with over 6,000 employees. The Port Authority uses CLEP to provide a systematic rationale for promotion of qualified non-college personnel into positions which normally are filled by recruitment of college graduates. At the University of Iowa, which is experimenting with CLEP, a student can earn up to 24 hours toward the 126 hours needed for graduation.

As a new Board program, CLEP has had no formally established test centers. "Institutional testing" has been in existence for several years and will be continued. CLEP centers will be keyed to the non-traditional student population which CLEP is primarily designed to serve. Some fifty of the largest urban areas in the United States have been selected for these centers; they will be located on college campuses, preferably where counseling services are available. These centers will be open in October, 1967, and will administer the tests once each month.

V. The Advanced Placement Program

The Advanced Placement Program is based on the fact that many students can complete college level courses while they are still in secondary school, and on the desire of participating colleges to encourage and recognize this achieve-

ment. The program provides course descriptions and the assistance of professional consultants to help schools establish college level courses for their stronger students. It sets, administers, and grades examinations based on these courses. It sends the examination grades, together with supporting materials, to the students' colleges, thus enabling the college to grant appropriate placement and credit. The examination grades are also sent to the candidate's schools, and the colleges are asked to report their decision regarding placement and credit to their students' schools. The Advanced Placement Committee has recommended to the Trustees that beginning in 1968 the grades also be reported directly to the students.

These examinations are administered once each year in May, and consist, at present, of twelve three-hour examinations. The Advanced Placement Program grew out of two experiments supported financially by the Fund for the Advancement of Education in the early 1950's. The Board's program, initially assisted by a grant from the Fund, has grown steadily since 1955 as indicated by this table.

Year	Schools	Students Taking Examinations	Examinations Taken	Colleges Entered
1955-56 . .	104	1,299	2,199	130
1960-61 . .	1,126	13,283	17,603	617
1964-65 . .	2,369	34,278	45,110	994
1965-66 . .	2,518	38,178	50,104	1,076
1966-67 . .	2,746	42,383	54,812	1,133

The AP candidates include five percent of their class, are distributed among ten percent of the nation's schools, and enter one-half its colleges. Many schools supply, and many colleges receive, only a few AP candidates. Less than half of the candidates' schools supply over eighty percent of the candidates, and about five percent of the colleges

entered by AP candidates receive over half the candidates.

The courses in which AP Examinations are currently offered are: American history, biology, chemistry, English, European history, French, German, Latin 4, and Latin 5, mathematics, physics, and Spanish. The course descriptions and examinations are prepared by examining committees of five or more teachers with the assistance of testing specialists on the ETS staff. Each committee has at least three members from colleges and two from secondary schools. Essay questions predominate on all exams but are supplemented, in most cases, by objective questions.

Examination papers are graded on a five-point scale. Of the 55,000 examinations taken in May, 1967, over half were labelled "qualified (3)," "well qualified (4)," or "extremely well qualified (5)." College policies on credit and placement vary a great deal. In 1963 about half the papers written resulted in credit or advanced placement, or both; this seems reasonable since about half the papers were marked "3" or higher. Most of the colleges receiving AP candidates normally accept in most subjects a grade of "3" as evidence of college level work already done. This is the practice in nearly all of the colleges which enroll relatively large numbers of AP candidates.

VI. The use of tests internationally

A Spanish scholastic aptitude test, Prueba de Aptitud Academica (PAA), was developed and first offered in 1964, after the opening of a College Board office in Puerto Rico in 1963. An achievement test of English as a second language is also offered, and achievement tests in Spanish and mathematics are planned. Puerto Rican advanced placement examinations in English, Spanish, and mathematics are also being developed. These tests were developed for

use by Puerto Rican institutions; the PAA is also used to assess Latin American students whose English competence is inadequate for the use of conventional admissions testing. Nearly 300 institutions in the United States have indicated an interest in this possibility. A good number of institutions in other Latin American countries are also interested in the possibility of using the tests in Spanish. Experimental administrations of the PAA have been given in every Latin American country except Bolivia, Paraguay, and El Salvador.

Since 1965 the Board, in association with ETS, has been responsible for the program known as TOEFL -- the Testing of English as a Foreign Language -- which the Ford and Danforth Foundations have helped support. There are international and institutional administrations of TOEFL, which is required or recommended by over 300 colleges and universities for all foreign-student candidates whose native language is not English. Over 20,000 students took the TOEFL in 1966-67, and 29,000 are expected to take it this year.

The African Scholarship Program of American Universities (ASPAU) has been of interest to the Board since its beginning in 1960, and the Board has made available to ASPAU without charge a version of the SAT for use in screening applicants. This test is also being used to help develop a new Ethiopian examinations system.

The format of the ASPAU program has been adopted to the Latin American scene in a program known as LASPAU. The Prueba de Aptitud Academica (PAA) is used to select students for the program. Scores earned on TOEFL at the beginning and end of the language-training program are used to measure the language proficiency and readiness of the students.

The SAT, Achievement Tests, and Advanced Placement

Examinations are all offered in worldwide administrations, and while they are taken largely by Americans living abroad, they are also open to foreign students.

VII. Research

The College Board undertakes research concerned with the broad questions facing those who make educational policy, as well as research designed to maintain the quality of the Board's programs or to suggest techniques that would serve to improve present practices.

The report of the Board's Committee on Organization and Functions recommended that the Board's thinking and action should place major emphasis on problems of access to higher education. In response to this charge, in 1964 the College Board thoroughly examined its research program in light of the changing educational system and new interests and responsibilities of the Board. The results of that study were published in Research and Development: A Report to the Trustees of the College Entrance Examination Board. Two important themes were reflected throughout that report. First, it was recognized that the research program of the College Board must be directed to a wide variety of problems affecting access to higher education under conditions of greatly expanded and increasingly varied educational opportunity. Second, it was recognized that the Board must devote its substantial but limited resources to important problems and useful solutions, to the anticipation of future trends and the needs they will generate, and particularly to those research questions of special relevance to the Board's role and responsibilities.

Six objectives for the College Board's programs of research and development were identified in this report to the Trustees: to describe the admissions process, to pro-

ject changes in the admissions process, to develop models of the admissions process, to develop strategies for dealing with existing or anticipated problems, to implement programs for effecting strategies, and to evaluate new programs.

The report to the Trustees also notes that within the expanse of the admissions process there are several procedures and requirements which represent barriers and impediments to rational access to higher education. They include:

1. Motives to attend college. Too little is known of when, how or why students decide to attend a particular college; it is necessary to study the development of these motives.

2. Guidance procedures. In order to improve the Board's own guidance services, it is important to understand the schools' current practices and to determine what information about college is lacking or ineffectively presented.

3. Channels of access to higher education. In moving from school to college, students move through an indefinite variety of channels which can be described in many ways -- social, educational, financial, geographical, etc. Longitudinal studies of those channels and their outcomes will be required to recognize impediments, irrational procedures, and future problems in access to higher education.

4. Financial restrictions. There are continuing problems associated with the development of fair and efficient ways of estimating students' financial needs, and programs designed to meet those needs must be examined closely with respect to their effectiveness in attracting diverse groups to higher education and in guiding students toward manpower deficits.

5. Admissions procedures. The College Board must seek

ways to help schools and colleges coordinate schedules and requirements where mutual benefit is clearly served.

6. Admissions standards. The obligation of the Board to subject these standards to continual scrutiny through research and informed evaluation derives not only from a need to respond to the legitimate interests of its member institutions, but also from its broader responsibilities to young people and society.

7. Post-secondary migration. The very extensive migration of students from junior to senior colleges, among four-year institutions, and out of higher education altogether raises many questions which bear on initial admissions. There is need for a better understanding of student migration, its causes, and its effects upon the educational system.

In addition to these problem areas, three groups of candidates, the talented student, the disadvantaged student, and the international student, are identified as having unique problems deserving special attention.

8. The talented student. As many colleges reach an advanced stage of selective admission, it becomes difficult to distinguish applicants on the basis of traditional measures. The Board must seek additional indices of special potential or personal qualities which will allow such institutions to constitute their student bodies in meaningful ways. The Board must also seek a better understanding of school-college articulation since as secondary schools differentially strengthen their curricula, the talented student may find it increasingly difficult to pursue a coherent program from school to college.

9. The disadvantaged student. Many of the problems faced by students who are disadvantaged originate long before any consideration of college admission, but there are questions which are amenable to research and lie well

within the Board's obligation to seek answers.

10. The international student. The Board must help colleges evaluate the academic potential of foreign applicants; it must also help those applicants obtain valid information about educational opportunity in this country.

These problem areas, together with a general category for problems difficult to define or anticipate, are regarded as continuing projects which provide a framework for the Board's activities in research and development.

Although much of the Board's research is directed toward its testing programs, a great deal of it is not. The research program is as broad as the Board's interest in the problems of facilitating and rationalizing access to higher education. Appendix D lists the titles of studies completed in a recent year, and gives some idea of the amount and scope of the Board's research.

The *Commission on* Tests will undoubtedly need to propose research in connection with its work, and it seems appropriate to end this description of the Board's testing programs with a summary of research activities, emphasizing the continuing concern of the College Board with promoting desirable changes in its programs in order to facilitate access to higher education.

Appendix A. Examples of SAT item types

Antonym:

Each question below consists of a word printed in capital letters, followed by five words or phrases lettered A through E. Choose the lettered word or phrase which is most nearly opposite in meaning to the word in capital letters.

Since some of the questions require you to distinguish fine shades of meaning, be sure to consider all the choices before deciding which one is best.

1. EXAGGERATION: (A) slight misunderstanding (B) silence (C) accurate representation (D) truth (E) understatement

Sentence completion:

Each of the sentences below has one or more blank spaces, each blank indicating that a word has been omitted. Beneath the sentence are five lettered words or sets of words. You are to choose the one word or set of words which, when inserted in the sentence, best fits in with the meaning of the sentence as a whole.

4. High yields of food crops per acre accelerate the ---- of soil nutrients.
   (A) depletion
   (B) erosion
   (C) cultivation
   (D) fertilization
   (E) conservation

Analogy:

In each of the following questions, a related pair of words or phrases is followed by five lettered pairs of

words or phrases. Select the lettered pair which best expresses a relationship similar to that expressed in the original pair.

7. TRIGGER:BULLET::

(A) handle:drawer
(B) holster:gun
(C) bulb:light
(D) switch:current
(E) pulley:rope

Reading comprehension:

Each passage in this group is followed by questions based on its content. After reading a passage, choose the best answer to each question. Answer all questions following a passage on the basis of what is stated or implied in that passage.

As long ago as 1670, Montanari noted that the second-magnitude star, Algol, was sometimes fainter than usual. Goodricke, in 1782, discovered that these variations were periodic and occurred at regular intervals of $2^d20^h49^m$. For about 2^d11^h the star remains of substantially constant brightness. During the next five hours it loses two-thirds of its light and returns to its original brightness in the five hours following. Goodricke realized that this variation in brightness might be caused by the partial eclipse of the star by a large body revolving round it, but no other binary stars were known at that time, and his explanation was almost forgotten until revived by Pickering a century later. Thousands of stars are now definitely known to vary in this fashion.

Like their prototype, Algol, these stars usually remain at a nearly constant magnitude for some time, following which their brightness decreases rapidly to a minimum.

The light may remain constant at the minimum for some time or only for a moment, but in either case the increase to normal is as rapid as the decrease. After remaining practically stationary for some time the brightness falls again, usually much less than before and sometimes almost imperceptibly, then rises again to normal and remains stationary for about the same time as before, after which the whole cycle is repeated with very exact periodicity. The deeper minimum is called the primary minimum, the other, the secondary.

The difference in brightness between the variable star and a neighboring comparison star of contrast brightness is repeatedly measured with a photometer and the time of each observation noted.

This characteristic change in brightness is readily explained on the assumption that the variable star is a binary pair with components usually differing in size and brightness, and that the orbital plane is nearly edgewise to the line of sight from the earth, so that the components eclipse one another during every revolution. When the fainter star begins to pass in front of the brighter, the light from the system begins to decrease.

10. The time for Algol's passage from its maximum brightness through its primary minimum and back again is approximately
    (A) 1.5 min.
    (B) 16 min.
    (C) 1.5 hr.
    (D) 10 hr.
    (E) 20 hr.

General understanding:

17. In order for animals to evolve from a completely aquatic environment to a terrestrial one, it is most necessary

for an adaptation to occur in the

(A) digestive system

(B) circulatory system

(C) respiratory system

(D) locomotor system

(E) nervous system

"Regular" or general mathematics:

20. What is the weight of 28 feet of uniform wire if 154 feet weigh 11 pounds?

(A) 2 lb. (B) $\frac{28}{11}$ lb. (C) $\frac{11}{2}$ lb. (D) 7 lb. (E) 14 lb.

Data sufficiency:

Each of the data sufficiency problems below consists of a question and two statements, labeled (1) and (2), in which certain data are given. You have to decide whether the data given in the statements are sufficient for answering the question. Using the data given in the statements plus your knowledge of mathematics and everyday facts (such as the number of days in July or the meaning of counterclockwise), you are to blacken space

A if statement (1) ALONE is sufficient, but statement (2) alone is not sufficient to answer the question asked;

B if statement (2) ALONE is sufficient, but statement (1) alone is not sufficient to answer the question asked;

C if BOTH statements (1) and (2) TOGETHER are sufficient to answer the question asked, but NEITHER statement ALONE is sufficient;

D if EACH statement ALONE is sufficient to answer the question asked;

E if statements (1) and (2) TOGETHER are NOT sufficient to answer the question asked, and additional data specific to the problem are needed.

31. In a four-volume work, what is the weight of the third volume?

(1) The four-volume work weighs 8 pounds.

(2) The first three volumes together weigh 6 pounds.

Appendix B. 1965-66 Achievement Test and Writing Sample volume

Name	Number of Tests Taken	Percent Increase Over Previous Year
English Composition	410,400	-0.5
Mathematics - Level I	310,300	3.6
Mathematics - Level II	18,000	
American History and Social Studies	123,700	-2.6
French	86,900	4.0
Chemistry	67,000	1.9
Biology	30,400	3.3
Spanish	39,400	6.2
Physics	28,500	-5.1
Latin	21,000	-6.0
German	14,800	4.7
European History & World Cultures	9,300	-4.4
Russian	1,300	-6.0
Hebrew	900	-8.7
Writing Sample	163,000	-6.9
Supplementary Achievement Tests:		
French Listening Comprehension	26,122	19.0
Spanish Listening Comprehension	10,947	34.0
German Listening Comprehension	4,337	22.3
Italian	781	22.6
Russian Listening Comprehension	712	22.5
Italian Listening Comprehension	451	20.9
Greek Listening Comprehension	239	13.3

Appendix C. Data on the speededness of the Achievement Tests

	% Completing Test	% Completing 75% of Test	Number of Items Reached by 80% of the Candidates	Total Number of Items
Mathematics-Level I	75	99	48	50
Mathematics-Level II	42	98	46	50
American History and Social Studies	47	96	91	100
French	40	93	78	92
Chemistry	29	97	82	90
Biology	55	99	95	100
Spanish	51	96	77	87
Physics	31	94	66	75
Latin	60	98	67	70
German	33	97	79	94
European History and World Cultures	68	98	97	100
*Italian	23	89	72	93
Hebrew	53	97	88	90

	Sections A	B	C	Sections A	B	C	Sections A	B	C	Sections A	B	C
*English Composition	82	82	39	98	96	78	35	35	21	35	35	30

*The data are for the tests given in January, 1967, except in the case of the English Composition Test which was given in March, 1967, and in the case of the Italian Achievement Test which was given in May, 1966.

Appendix D. Completed research studies, from the 1965-66 Annual Report of the College Board

"College Decisions on Advanced Placement. II. An Interview Survey of Advanced Placement Policies and Practices at Sixty-Three Colleges," Patricia L. Casserly and Richard E. Peterson, Educational Testing Service.

"An Investigation of Item Bias," T. Anne Cleary and Thomas L. Hilton, Educational Testing Service.

"Effects of an Accelerated Reading Course on SAT-V Scores," William E. Coffman and Mary Ellen Neun, Educational Testing Service.

"On the Validity of Essay Tests of Achievement," William E. Coffman, Educational Testing Service.

"Single Score versus Multiple Score Reading of the American History Advanced Placement Examinations," William E. Coffman and Dana G. Kurfman, Educational Testing Service.

"Relationships among Academic Achievement, Multivariate Test Scores, and a New Measure of Individual Purpose," Frank L. Field, University of California at Santa Barbara.

"A Validity Study of a Spanish Language Scholastic Aptitude Test in United States Colleges and Universities," F. B. Gannon, Don Oppenheim, and James E. Wohlhueter, Educational Testing Service.

"A Survey and Analysis of Special Programs for the Education of Socially and Culturally Disadvantaged Children and Youth in the Schools and Colleges in the United States," Edmund W. Gordon, Yeshiva University.

"Effectiveness of PSAT and SAT Booklets: I. Bulletin for Students, 1964 Preliminary Scholastic Aptitude Test," Gerald Halpern and Masu Sasajima, Educational Testing Service.

"Effectiveness of PSAT and SAT Booklets: II. Your College

Board Scores: Preliminary Scholastic Aptitude Test," Gerald Halpern and Masu Sasajima, Educational Testing Service.

"Effectiveness of PSAT and SAT Booklets: III. A Description of the College Board Scholastic Aptitude Test," Gerald Halpern and Masu Sasajima, Educational Testing Service.

"Scale Properties of the Interest Index," Gerald Halpern, Educational Testing Service.

"Growth Study II. Personal Background, Experience, and School Achievement: An Investigation of the Contribution of Questionnaire Data to Academic Prediction," Thomas L. Hilton and A. E. Myers, Educational Testing Service.

"Prediction of Freshman Grade-Point Averages of Foreign Students at U. S. Institutions of Higher Learning -- A Pilot Study," John J. Howell, New Jersey Educational Research.

"Development of a Reduced Set of Composite Equations for Three Predictors," Shawky F. Karas and Lorne M. Kendall, Educational Testing Service.

"Self-Instructional Program," Milton H. Maier and Paul I. Jacobs, Educational Testing Service.

"Special Test Preparation, Its Effect on College Board Scores and the Relationship of Affected Scores to Subsequent College Performance," Joseph E. Marron, United States Military Academy.

"The Campus Cultures Research Project," Joyce Slayton Mitchell, Hope Foundation.

"A Comparison of Three Methods for Scoring Multiple-Choice Tests," Charles T. Myers, Educational Testing Service.

"Project Essay-Grade," Ellis B. Page, University of Connecticut.

"A Factor Analysis of the Mathematical Sections of the Scholastic Aptitude Test," Robert M. Pruzek and William

E. Coffman, Educational Testing Service.

"Research on Personal Values Inventory," George Schlesser, Colgate University.

"Follow-Up Study of a National Sample of High School Seniors: Phase 2 -- One Year after Graduation," Dean W. Seibel, Educational Testing Service.

"The Practitioners' Perspective on Psycho-Educational Tests: A Survey of Practices and Attitudes," Irving E. Sigel, Harriet G. Gales, and Dolores I. Kost, The Merrill-Palmer Institute.

"An Analysis of Culver Military Academy Data Relating to Performance on the College Board Chemistry Test as Affected by Curricular Change," David W. Stickell, Educational Testing Service.

"A Study of the Comparative Predictive Validities of the Essay and Objective Sections of the College Entrance Examination Board Advanced Placement Examination in Physics," Raymond E. Thompson, Educational Testing Service.